CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.12/KRIDL/GSB-II/Gradation/2013-14 Date : 10.02.2014

GRADATION FOR GSB-II (CLOSE GRADED)
IS : 2720 (Part - 4)

Client : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of work : Improvements to RCC Drain and Concrete Roads in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/SSD/PR/2013-14 Dated: 08.01.2014

Date of Testing : 10.02.2014

Sample Source : GSB Mix Plant Bangalore. **Oven Dry Wt (gm) :** 25100

TABLE – 1

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits
53	0	0	0	100	100
26.5	3375	3375	13.45	86.55	70-100
9.5	6345	9720	38.73	61.27	50-80
4.75	3850	13570	54.06	45.94	40-65
2.36	3655	17225	68.63	31.37	30-50
0.425	2240	19465	77.55	22.45	15-25
0.075	3260	22725	90.54	9.46	3-10
PAN	2375				
Total	25100				

Remarks: Satisfies MORTH Specifications as per Table 400-1, Grading II

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Job No.: CTCE/BBMP/W.No.12/KRIDL/GSB-II/2013-14 Date: 10.02.2014

ATTERBERG LIMITS TEST FOR GSB
MORTH TABLE-400-01

Client : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements to RCC Drain and Concrete Roads in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/SSD/PR/2013-14 Dated: 08.01.2014

Date of Testing : 10.02.2014

Sample Source : GSB, Mix Plant

As per MORTH Table : 400-01

Sl. No.	Particulars	Test Results	Standards as per Specifications
1	Liquid Limit, %	22.30	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Job No.: CTCE/BBMP/W.No.12/KRIDL/WMM/Gradation/2013-14

20.02.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements to RCC Drain and Concrete Roads in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/SSD/PR/2013-14 Dated: 08.01.2014

Date of Testing : 20.02.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **25100**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	995	995	4.0	96.0	95-100
22.4	5820	6815	27.2	72.8	60-80
11.2	5475	12290	49.0	51.0	40-60
4.75	4100	16390	65.3	34.7	25-40
2.36	3795	20185	80.4	19.6	15-30
0.600	2225	22410	89.3	10.7	8-22
0.075	2405	24815	98.9	1.1	0-8

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Job No.: CTCE/BBMP/W.No.12/KRIDL/WMM/AIV/2013-14

20.02.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, Bangalore.
Name of the Work	Improvements to RCC Drain and Concrete Roads in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.
Reference	BBMP/DZ/AEE/SSD/PR/2013-14 Dated: 08.01.2014
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	20.02.2014

Sl No.	Details	Trial No.			Average
		1	2	3	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	378	379	379.5	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	80	82	82.5	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	298	297	297	
4	Aggregate Impact value = percent fines	21.16	21.64	21.74	
	100* (W_2/W_1)%				**21.51**

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

Note:

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Job No.: CTCE/BBMP/W.No.12/KRIDL/WMM/S-T/2013-14 20.02.2014

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, Bangalore.
Name of Work	Improvements to RCC Drain and Concrete Roads in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.
Reference	BBMP/DZ/AEE/SSD/PR/2013-14 Dated: 08.01.2014
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	20.02.2014

Result : Flakiness Index = **12.96%**

Elongation Index = **13.56%**

Result : Combined Flakiness & Elongation index 26.52%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

Note:

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20.02.2014

ATTERBERG LIMITS TEST FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements to RCC Drain and Concrete Roads in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/SSD/PR/2013-14 Dated: 08.01.2014

Date of Testing : 20.02.2014

Material : WMM

Sample Location : WMM Mix Plant

As per MORTH Table 400-11

Sl. No.	Particulars	Test Results	Standards as per Specifications
1	Liquid Limit, %	22.70	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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